PLANT IMMIGRANTS.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is made up of descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the INVENTORY OF PLANTS IMPORTED.

Applications for material listed in these pages may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual catalogue entitled NEW PLANT INTRODUCTIONS which will be sent you in the autumn and in which will be listed all plants available at that time. Regular requests checked off on the check list sent out with the catalogue are not kept over from year to year. If you are especially interested in some particular plant in the catalogue write and explain in detail your fitness to handle it.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

David Fairchild,

Agricultural Explorer in Charge.

February 4, 1919.

Acanthorhiza aculeata. (Phoenicaceae), 45906. **Wendland palm.** From Venezuela. Collected by Mr. H. M. Curran, Laurel, Maryland. "A palm with a trunk 6 to 9 feet tall and 4 to 6 inches in diameter, armed with spiniform roots 3 to 4 inches in length. The leaves, forming a dense crown, are fan-shaped, green above and silvery below, about 3 feet in diameter on petioles 18 inches long. The leaf bases are densely covered with woolly scurf which splits into many strong fibers; and the branched inflorescence about 2 feet long, is also densely covered with white wooly scurf. The smooth fruit, three-fourths of an inch long by five eights of an inch in diameter, is not edible." (C. B. Doyle.)

Anacardium occidentale (Anacardiaceae), 45915. **Cashew.** From Panama, R. P. Presented by Mr. Ramon Arias-Feraud. "**Red cashew.** Trees, about 20 feet high, bearing fruits the third year." (Arias-F.) A handsome quick-growing tree reaching a height of 40 feet, with large, entire, oval leaves; the wood is close-grained, strong and durable, and is used for boat building. The **cashew,** like the poison ivy, possesses an acrid substance which is strongly irritant to the epidermis and the mucous membranes of human beings. The poisonous material is not, however, spread throughout the plant but is mostly concentrated in the rather soft shell of the nut which is borne upon a pear-shaped, red or yellow, fleshy receptacle, 2 to 4 inches long. This receptacle is edible and quite harmless when ripe, having a very agreeable subacid taste in the raw state, and is also very good when cooked. The nut is kidney-shaped or distinctly curved near the middle, and contains a single large kernel of quite firm flesh, of fine texture, and of delicate, very pleasant nutty flavor. No attempt, however, should be made to eat it in the raw state on account of the poisonous juice of the shell which must be driven off by the heat, so that roasting is an absolute necessity. (Adapted from Cook and Collins, Economic Plants of Porto Rico.)

Annona reticulata (Annonaceae), 45955. **Bullock's-heart.** From Colombia. Presented by Mr. W. O. Wolcott, Medellin, Colombia. "The tree grows about 15 feet high, is very thrifty, thriving best in a hot climate from sea-level to about 3,000 feet elevation, and apparently wants rich soil and plenty of moisture. The fruit is about the size and shape of a bullock's heart, and has a

thin, light greenish yellow skin. It is cut open and eaten with a spoon, there being no core, though many seeds. The flavor is very sugary and fine." (Wolcott.)

Botor tetragonoloba (Fabaceae), 45928. **Goa bean.** From Los Banos, P. I. Presented by the College of Agriculture. An annual twining vine with loose-flowered racemes of large light blue flowers, followed by square pods having a wing one-fourth of an inch broad on each angle. Grown in tropical and subtropical regions for the young tubers which are eaten raw or cooked, and for the young pods which are used like string beans. (Adapted from Bailey, Standard Cyclopedia of Horticulture, vol. 5, p. 2849.)

Calyptrocalyx spicatus (Phoenicaceae), 45957. **Palm.** From near Kandy, Ceylon. Secured by Mr. George F. Mitchell, Treasury Department, D. C., at the Peradeniya Botanical Gardens. This stately palm, native of Amboina and other islands of the Moluccan group, attains a height of 40 feet. The pinnate leaves have valvate leaflets with reflexed margins; the flowers, arranged on long spikelike spadices, produce orange-colored, one-seeded fruits. The wood is used for timber and the seeds serve as a substitute for betel-nuts. (Adapted from Gardeners' Chronicle, June, 1870, p. 765.)

Cydonia oblonga (Malaceae), 45889. **Quince.** From Murdock, Kansas. Presented by Mr. J. W. Riggs, Experiment Grounds. Scions from trees of a variety sent to the Office of Foreign Seed and Plant Introduction by Professor N. E. Hansen from Samarkand, Russian Turkestan, May 24, 1898, and given S. P. I. No. 1123. Mr. Riggs states that this variety has yielded fine fruit at Murdock when trees of standard quince varieties have not borne any fruit. The tree is hardy, not being injured in that section of Kansas by drought and heat. Scions grafted on apple stocks.

Cymbopogon martini (Poaceae), 45966. **Rusa-oil grass.** From Dehra Dun, U. P., India. Presented by Mr. R. S. Hole, Forest Botanist, Forest Research Institute and College. A stout perennial grass found in northern India. It grows to a height of 6 feet and has long, perfectly smooth leaves of a soft, delicate texture and a rich green color. The slender panicles, 8 to 12 inches long, turn to a bright reddish brown color in ripening. The distinction between the two kinds of

Rusa-oil (lemon oil) procured from this grass, viz., **motia** and **sufia**, which the distillers of Khandesh and the neighboring districts recognize, apparently depends on similar conditions, although the accounts concerning them are to some extent conflicting. The authors of the Pharmacographia Indica (vol. 3, p. 558) say: "The oil distillers in Khandesh call the grass **motiya** when the inflorescence is young and of a bluish white color; after it has ripened and become red, it is called **sonfiya**. The oil obtained from it in the first condition has a more delicate odor than that obtained from the ripened grass." On the other hand, Mr. E. G. Fernandez reports in a letter to Kew: "The **motia** species (or variety) is usually confined to the higher slopes, while the **sufia** grass is more common in the plains and on the plateau-land in the hills, but they are not infrequently found growing together. The **sufia** is much more strongly scented, but the odor of **motia** is preferred, and this latter commands double the price of the former." The samples of both forms supplied by Mr. Fernandez do not show any morphological differences, and as to age, some of the **motia** samples are in a more advanced stage than the **sufia**. (Adapted from Stapf, The Oil-grasses of India and Ceylon, in the Kew Bulletin of Miscellaneous Information, 1906, p. 341.)

Dendrocalamus giganteus (Poaceae), 45963. **Bamboo.** From near Kandy, Ceylon. Secured by Mr. George F. Mitchell, Treasury Department, Washington, D. C., at the Peradeniya Botanical Gardens. One of the largest of the bamboos, growing to a height of 100 feet with a stem diameter of 8 inches, the stem walls being one-half of an inch thick. It is probably indigenous in the hills of Martaban and is cultivated in Burma and also in most tropical countries. The stems are used for posts and rafters, and for piping water. (Adapted from Brandis, Indian Trees, p. 678.)

Dypsis madagascariensis (Phoenicaceae), 45958. **Palm.** From near Kandy, Ceylon. Secured by Mr. George F. Mitchell, Treasury Department, Washington, D. C., at the Peradeniya Botanical Gardens. A graceful Madagascar palm about 15 feet high, with leaves 10 feet long. The pinnate leaves, with 18-inch long segments arranged in fascicles of 6 or 8, seem to be arranged on the stem in threes, giving it a triangular appearance. This arrangement of the leaves and the fascicled

arrangement of the leaflets is peculiar to the genus Dypsis, not being found in any other pinnate-leaved palms. (Adapted from Gardeners' Chronicle, New Series, vol. 24, p. 394.)

Ipomea batatas (Convolvulaceae), 45971. **Sweet potato.** From Tolga, Queensland, Australia. Presented by Mr. J. A. Hamilton. "General Grant sweet potato, which to our fancy is the best variety for the table. As a rule the vines do not run very much. (Hamilton.)

Lagenaria vulgaris (Cucurbitaceae), 45904. **Gourd.** From Japan. Presented by Dr. L. H. Bailey, Ithaca, New York, who secured them from Governor H. Hiratsuka, Utsunomiya, Japan. "The largest gourd utensils I ever saw were at Utsunomiya, Japan. I asked for seeds of them and have received a packet from Governor H. Hiratsuka of the prefecture. I am sending you some of these seeds thinking that possibly you would like to have them grown at your Maryland or Florida Stations, where the season will probably allow them to mature. I should think that some of the gourds I saw in the market in Japan would hold at least a peck." (Bailey.)

Latania commersonii (Phoenicaceae), 45960. **Palm.** From near Kandy, Ceylon. Secured by Mr. George F. Mitchell, Treasury Department, Washington, D. C., at the Peradeniya Botanical Gardens. An unarmed palm from Mauritius, having leaves with petioles 4 to 6 feet long, the fan-shaped blades being about 5 feet in diameter and divided into lanceolate, acuminate segments, 2 feet long by 3 inches wide. It is a particularly striking palm, the long smooth petioles and the ribs of the fanlike leaves being colored a bright crimson which is especially brilliant in the young foliage. (Adapted from Bailey, Standard Cyclopedia of Horticulture, vol. 4, p. 1824.)

Magnolia globosa (Magnoliaceae), 45964. From Darjeeling, India. Secured by Mr. George F. Mitchell, Treasury Department, Washington, D. C., at the Lloyd Botanic Garden. "From Lloyd Botanic Garden, Darjeeling. Found at 10,000 feet elevation and requires a moist climate." (Mitchell.) A small tree with brown branches and ovate deciduous leaves 9 inches long by 6 inches wide. The globose flower buds, which appear with the young leaves, are about 2 inches in diameter and open

into fragrant white flowers 5 inches across. (Adapted from Hooker, Flora of British India, vol. 1, p. 41.)

Pomaderris elliptica (Rhamnaceae), 45892. **Kumarahou.** From Auckland, New Zealand. Presented by Mr. H. R. Wright. "A rare dwarf shrub belonging to the Auckland Province. This plant is difficult to transplant, but is easily raised from seed. It flowers when two years old and if kept well pinched back makes a glorious specimen, being covered in spring with a mass of yellow flowers. It grows on some of our poor clay lands of a close nature, similar to that where the heather grows." (Wright.) A branching shrub 4 to 8 feet high with the young branches, leaves and flower clusters covered with white or buff-colored stellate hairs. The ovate to oblong leaves are 2 to 3 inches long, and the cymes of yellow flowers, with crisped-margined petals, are clustered into large many-branched panicles. Native name **Kumarahou**, (from "Kumara," a tuber-like root, and "hou," growing deeply or strongly.) (Adapted from Cheeseman, Manual of the New Zealand Flora, p. 99, and from Laing and Blackwell, Plants of New Zealand, p. 236.)

Pyrus communis (Malaceae), 45901. **Pear.** From Missouri. Presented by Dr. J. C. Whitten, College of Agriculture, Columbia, Missouri. "The **Surprise pear** forwarded by Dr. Whitten of the College of Agriculture, Columbia, Mo., is one of the most promising as a blight-resistant pear and may prove of economic importance as a stock for commercial varieties. As grown by Prof. Reimer at Talent, Oregon, it was one of the most vigorous of stocks and seemed to transmit this vegetative character to nearly all varieties of pears which were grafted or budded upon it. Its congeniality, in other words, is to be commended. Dr. Whitten says that the **Surprise pear** is apparently a pure *Pyrus communis*. He further says that he received three trees for trial from Stark Bros., Louisiana, Mo., some years ago. This variety is a large, vigorous grower. It early begins the formation of short, spur-like branches, which spread horizontally, with few of the upright rank shoots customary to Kieffer and other hybrids. The fruit is small, not much larger than Seckel. It is moderately late, ripening only a little ahead of Kieffer, and is of poor quality. The variety bears profusely, however. Dr. Whitten says that he does not remember having seen a trace of blight in any

of the **Surprise** trees on his grounds, though they are growing in a pear orchard in which numerous susceptible varieties have died out entirely from blight, and other varieties have blighted more or less every year." (B. T. Galloway.)

Rubus sp. (Rosaceae), 45891. **Blackberry.** From Colombia. Presented by Mr. Hermano Apolinar-Maria, Institute de la Salle, Bogotá, at the request of Mr. F. M. Chapman, Washington, D. C. In April, 1913, while on a visit to Colombia, I found this variety growing in a little posada called El Pinon in the temperate zone at an elevation of 9,600 feet on the trail from Bogotá to Fusagasuga. El Pinon is exceedingly wet and this giant blackberry may be found only under the conditions which prevail there. It is not the El Moral de Castile, a cylindrical berry which grows in profusion at from 5,000 to 7,500 feet, but a much larger, rounder berry shaped more like a strawberry. These berries are often 3 inches in length." (Chapman.)

Solandra longiflora (Solanaceae), 45953. From Sydney, New South Wales, Australia. Presented by Mr. J. H. Maiden, Director, Botanic Garden. A West Indian evergreen shrubby vine, with ovate to obovate sharply pointed leaves on purplish petioles and yellow, fragrant flowers usually a foot long. If left untrimmed it is a rampant climber but can be grown as a dwarf shrub by constant pruning. It is an adaptive plant as it grows well in the driest and poorest places but does not appear to object to gross feeding. The foliage of this plant produces a valuable drug called solandrine which has the same active principles as atropine derived from the leaves and roots of *Atropa belladonna.* The best method of propagation is by cuttings which should be taken from the flowering branches just after the flowering season is over and planted in a well-drained light sandy soil. (Adapted from the Agricultural Gazette of New South Wales, vol. 28, p. 670.)

Stizolobium niveum (Fabaceae), 45940. **Dedman's bean.** From Salisbury, Rhodesia, Africa. Presented by the Director of Agriculture. One of the principle advantages that this bean has over the Florida velvet bean is the absence of the fine prickly hairs on the stem and leaves which makes the curing of that plant for hay a difficult operation. It also seems to be more resistant to frost. For these reasons **Dedman's bean,** or as it

is more commonly known here, **stingless velvet bean,** is gradually replacing the Florida variety."

Stizolobium pruritium officinale (Fabaceae), 45899. From Nicaragua. Presented by Mr. B. C. Sibley, Escuela de Agricultura, Chinandega, Nicaragua. "**Pica-pica.** From what I have observed of this plant it must be very much like the velvet bean of the Florida orchards. I have noticed that it is a very heavy producer of nitrogen nodules. They are very numerous and also quite large. This fact has been taken advantage of by the natives, so that they welcome the plant into the corn fields that lie fallow or resting. One other point in its favor is, that the stem of the plant during the growing season does not become hard and woody; so that, used as a green manure crop, it would soon decay in the soil after being plowed under." (Sibley.)

Tamarix aphylla (Tamaricaceae), 45952. **Tamarisk.** From Tucson, Arizona. Presented by Prof. J. J. Thornber, University of Arizona. This African **tamarisk**, the best of the Egyptian species for cultivation as a timber tree and as a windbreak on desert land, is also a very handsome ornamental. The galls, which are commonly produced on this species in southern Algiers and are much used by the natives for tanning, contain 45 per cent of pyrogallic tannin. (Adapted from letters of Dr. L. Trabut and Thos. W. Brown.)

Telfairia pedata (Cucurbitaceae), 45923. From East Africa. Presented by Mr. M. Buysman, Lawang, Java. A climbing shrub, native of Zanzibar, with palmately compound leaves, the three to five oblong leaflets being 3 to 5 inches long, toothed on the margin and long pointed. The pale purple flowers have a fringed corolla from 2 to 4 inches broad, and the oblong fruit, with 10 to 12 deep furrows, is often 3 feet long and 8 inches in diameter. The seeds are flat and round, about an inch across, with sweet edible kernels tasting like almonds, and yield an abundance of a clear bland oil which is said to be equal to olive oil. (Adapted from Bailey, Standard Cyclopedia of Horticulture, vol. 6, p. 3320.)

Vitis vinifera (Vitaceae), 45968. **Grape.** From Tokyo, Japan. Purchased from the Tokyo Plant, Seed and Implement Company. "**Koshu.** A very sweet variety of grape which seems to be especially suited to the Tokyo climate." (F. N. Meyer.)

Notes on Behavior of Previous Introductions.

In a letter dated November 2, 1918, Mr. S. Elce, of Mary Esther, Florida, reports as follows; "I have at last the great pleasure of forwarding to you a sample of fruit from a Chinese persimmon plant (*Diospyros kaki*, S. P. I. No. 22350.) you sent me about six years ago. The tree bore three fruits last year, which dropped while green; this year we have nine fine fruits uniform in size and color. One ripened in advance of the others and we ate it direct from the tree and found it more delicious in flavor than any we have as yet tasted from neighboring orchards - and seedless! The one I am sending to you is not fully ripe, but I expect it will be when you receive it; if it is not soft, please keep it a few days, or until it is so. You will find it worth waiting for. I send it in condition to carry through the mail. The tree is fine and healthy, 8 feet high. It has withstood the storms which destroyed our peaches and plums two or three years ago, droughts, etc. You sent me some dasheens (*Colocasia sp.* S. P. I. No. 19224) five or six years ago, which prospered finely and were the admiration of all beholders; the tubers and shoots we found most excellent on the table."

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Bureau of Plant Industry.
Office of Foreign Seed and Plant Introduction.
Washington, D. C.

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